



Sequence Listing

<100> Nikolics, Karoly  
McFarland, Keith C.  
Segaloff, Deborah L.  
Seeburg, Peter H.

<120> Glycoprotein Hormone Receptor Molecules

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<140> US 10/755,190

<141> 2004-01-09

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<151> 2001-06-07

<150> US 08/207,814

<151> 1994-03-07

<150> US 07/781,153

<151> 1991-10-31

<150> PCT/US90/02488

<151> 1990-05-04

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				425					430					435
Thr	Val	Ile	Thr	Leu	Glu	Arg	Trp	His	Thr	Ile	Thr	Tyr	Ala	Val
				440					445					450
Gln	Leu	Asp	Gln	Lys	Leu	Arg	Leu	Arg	His	Ala	Ile	Pro	Ile	Met
				455					460					465
Leu	Gly	Gly	Trp	Leu	Phe	Ser	Thr	Leu	Ile	Ala	Thr	Met	Pro	Leu
				470					475					480
Val	Gly	Ile	Ser	Asn	Tyr	Met	Lys	Val	Ser	Ile	Cys	Leu	Pro	Met
				485					490					495
Asp	Val	Glu	Ser	Thr	Leu	Ser	Gln	Val	Tyr	Ile	Leu	Ser	Ile	Leu
				500					505					510

Ile Leu Asn Val	Val Ala Phe Val Val	Ile Cys Ala Cys Tyr Ile
515		520 525
Arg Ile Tyr Phe	Ala Val Gln Asn Pro	Glu Leu Thr Ala Pro Asn
530		535 540
Lys Asp Thr Lys	Ile Ala Lys Lys Met	Ala Ile Leu Ile Phe Thr
545		550 555
Asp Phe Thr Cys	Met Ala Pro Ile Ser	Phe Phe Ala Ile Ser Ala
560		565 570
Ala Phe Lys Val	Pro Leu Ile Thr Val	Thr Asn Ser Lys Ile Leu
575		580 585
Leu Val Leu Phe	Tyr Pro Val Asn Ser	Cys Ala Asn Pro Phe Leu
590		595 600
Tyr Ala Ile Phe	Thr Lys Ala Phe Gln	Arg Asp Phe Leu Leu Leu
605		610 615
Leu Ser Arg Phe	Gly Cys Cys Lys Arg	Arg Ala Glu Leu Tyr Arg
620		625 630
Arg Lys Glu Phe	Ser Ala Tyr Thr Ser	Asn Cys Lys Asn Gly Phe
635		640 645
Pro Gly Ala Ser	Lys Pro Ser Gln Ala	Thr Leu Lys Leu Ser Thr
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<211> 341

<212> PRT

<213> Artificial Sequence

<220>

<223> deduced sequence

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Arg Leu Ser Leu Thr Tyr Leu Pro Val Lys Val Ile Pro Ser Gln
35 40 45
Ala Phe Arg Gly Leu Asn Glu Val Val Lys Ile Glu Ile Ser Gln
50 55 60
Ser Asp Ser Leu Glu Arg Ile Glu Ala Asn Ala Phe Asp Asn Leu
65 70 75
Leu Asn Leu Ser Glu Leu Leu Ile Gln Asn Thr Lys Asn Leu Leu
80 85 90

Tyr	Ile	Glu	Pro	Gly	Ala	Phe	Thr	Asn	Leu	Pro	Arg	Leu	Lys	Tyr	95	100	105
Leu	Ser	Ile	Cys	Asn	Thr	Gly	Ile	Arg	Thr	Leu	Pro	Asp	Val	Thr	110	115	120
Lys	Ile	Ser	Ser	Ser	Glu	Phe	Asn	Phe	Ile	Leu	Glu	Ile	Cys	Asp	125	130	135
Asn	Leu	His	Ile	Thr	Thr	Ile	Pro	Gly	Asn	Ala	Phe	Gln	Gly	Met	140	145	150
Asn	Asn	Glu	Ser	Val	Thr	Leu	Lys	Leu	Tyr	Gly	Asn	Gly	Phe	Glu	155	160	165
Glu	Val	Gln	Ser	His	Ala	Phe	Asn	Gly	Thr	Thr	Leu	Ile	Ser	Leu	170	175	180
Glu	Leu	Lys	Glu	Asn	Ile	Tyr	Leu	Glu	Lys	Met	His	Ser	Gly	Ala	185	190	195
Phe	Gln	Gly	Ala	Thr	Gly	Pro	Ser	Ile	Leu	Asp	Ile	Ser	Ser	Thr	200	205	210
Lys	Leu	Gln	Ala	Leu	Pro	Ser	His	Gly	Leu	Glu	Ser	Ile	Gln	Thr	215	220	225
Leu	Ile	Ala	Leu	Ser	Ser	Tyr	Ser	Leu	Lys	Thr	Leu	Pro	Ser	Lys	230	235	240
Glu	Lys	Phe	Thr	Ser	Leu	Leu	Val	Ala	Thr	Leu	Thr	Tyr	Pro	Ser	245	250	255
His	Cys	Cys	Ala	Phe	Arg	Asn	Leu	Pro	Lys	Lys	Glu	Gln	Asn	Phe	260	265	270
Ser	Phe	Ser	Ile	Phe	Glu	Asn	Phe	Ser	Lys	Gln	Cys	Glu	Ser	Thr	275	280	285
Val	Arg	Lys	Ala	Asp	Asn	Glu	Thr	Leu	Tyr	Ser	Ala	Ile	Phe	Glu	290	295	300
Glu	Asn	Glu	Leu	Ser	Gly	Trp	Asp	Tyr	Asp	Tyr	Gly	Phe	Cys	Ser	305	310	315
Pro	Lys	Thr	Leu	Gln	Cys	Ala	Pro	Glu	Pro	Asp	Ala	Phe	Asn	Pro	320	325	330
Cys	Glu	Asp	Ile	Met	Gly	Tyr	Ala	Phe	Leu	Arg					335	340	

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<211> 2366

<212> DNA

<213> Rattus

<400> 5

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ttg	ctg	gca	ttc	ttg	ggc	acg	gga	tct	gga	tgt	cat	cac	130														
Leu	Leu	Ala	Phe	Leu	Gly	Thr	Gly	Ser	Gly	Cys	His	His															
		10						15				20															
tgg	ctg	tgt	cat	tgc	tct	aat	agg	gtc	ttt	ctc	tgc	caa	169														
Trp	Leu	Cys	His	Cys	Ser	Asn	Arg	Val	Phe	Leu	Cys	Gln															
				25				30																			
gac	agc	aag	gtg	aca	gag	att	ccg	acc	gac	ctc	ccc	cgg	20														
Asp	Ser	Lys	Val	Thr	Glu	Ile	Pro	Thr	Asp	Leu	Pro	Arg															
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aac	gcc	att	gaa	ctg	agg	ttt	gtg	ctc	acc	aag	ctt	cga	247														
Asn	Ala	Ile	Glu	Leu	Arg	Phe	Val	Leu	Thr	Lys	Leu	Arg															
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gtc	atc	ccg	aaa	gga	tca	ttt	gct	gga	ttt	gga	gac	ctg	286														
Val	Ile	Pro	Lys	Gly	Ser	Phe	Ala	Gly	Phe	Gly	Asp	Leu															
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gag	aaa	ata	gag	atc	tct	cag	aat	gat	gtc	ttg	gaa	gta	325														
Glu	Lys	Ile	Glu	Ile	Ser	Gln	Asn	Asp	Val	Leu	Glu	Val															
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ata	gag	gca	gat	gtg	ttc	tcc	aac	cta	ccc	aag	ttg	cat	364														
Ile	Glu	Ala	Asp	Val	Phe	Ser	Asn	Leu	Pro	Lys	Leu	His															
				90				95																			
gaa	att	agg	att	gaa	aag	gcc	aac	aat	ctt	ctg	tac	atc	403														
Glu	Ile	Arg	Ile	Glu	Lys	Ala	Asn	Asn	Leu	Leu	Tyr	Ile															
		100				105						110															
aac	ccg	gag	gcc	ttc	cag	aat	ctc	ccc	agt	ctc	aga	tat	442														
Asn	Pro	Glu	Ala	Phe	Gln	Asn	Leu	Pro	Ser	Leu	Arg	Tyr															
		115						120																			
ctg	tta	ata	tcc	aac	aca	ggc	att	aag	cac	ttg	cca	gct	481														
Leu	Leu	Ile	Ser	Asn	Thr	Gly	Ile	Lys	His	Leu	Pro	Ala															
125				130						135																	
gtt	cac	aag	atc	cag	tct	ctc	caa	aag	gtt	cta	cta	gac	520														
Val	His	Lys	Ile	Gln	Ser	Leu	Gln	Lys	Val	Leu	Leu	Asp															
		140				145						150															
att	caa	gat	aac	ata	aac	atc	cac	atc	gtt	gcc	agg	aac	559														
Ile	Gln	Asp	Asn	Ile	Asn	Ile	His	Ile	Val	Ala	Arg	Asn															
				155				160																			
tcc	ttc	atg	gga	ctg	agt	ttt	gaa	agt	gtg	att	tta	tgg	598														
Ser	Phe	Met	Gly	Leu	Ser	Phe	Glu	Ser	Val	Ile	Leu	Trp															
165						170				175																	
ctg	agt	aag	aat	ggg	att	gaa	gaa	ata	cac	aac	tgt	gca	637														
Leu	Ser	Lys	Asn	Gly	Ile	Glu	Glu	Ile	His	Asn	Cys	Ala															
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ttc	aac	gga	act	cag	cta	gat	gaa	ctg	aat	cta	agc	gat	676														
Phe	Asn	Gly	Thr	Gln	Leu	Asp	Glu	Leu	Asn	Leu	Ser	Asp															
190				195				200																			

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Asn	Asn	Asn	Leu	Glu	Glu	Leu	Pro	Asn	Asp	Val	Phe	Gln	
	205						210					215	
gga	gcc	tct	ggg	cca	gtc	att	tta	gat	atc	tca	agg	aca	754
Gly	Ala	Ser	Gly	Pro	Val	Ile	Leu	Asp	Ile	Ser	Arg	Thr	
			220						225				
aag	gtc	cat	tcc	tta	cca	aac	cat	ggc	tta	gaa	aat	ctg	793
Lys	Val	His	Ser	Leu	Pro	Asn	His	Gly	Leu	Glu	Asn	Leu	
	230					235					240		
aag	aag	ctg	agg	gcc	agg	tca	aca	tac	cgc	ttg	aaa	aag	832
Lys	Lys	Leu	Arg	Ala	Arg	Ser	Thr	Tyr	Arg	Leu	Lys	Lys	
		245						250					
ctc	cct	aat	ctg	gac	aag	ttt	gtc	acc	ctc	atg	gag	gcc	871
Leu	Pro	Asn	Leu	Asp	Lys	Phe	Val	Thr	Leu	Met	Glu	Ala	
255					260					265			
agc	ctc	acc	tac	ccc	agc	cac	tgc	tgt	gct	ttt	gca	aac	910
Ser	Leu	Thr	Tyr	Pro	Ser	His	Cys	Cys	Ala	Phe	Ala	Asn	
	270					275						280	
ttg	aag	cgg	caa	atc	tct	gaa	ctt	cat	cca	att	tgc	aac	949
Leu	Lys	Arg	Gln	Ile	Ser	Glu	Leu	His	Pro	Ile	Cys	Asn	
			285						290				
aag	tct	att	tta	agg	caa	gat	att	gat	gat	atg	act	caa	988
Lys	Ser	Ile	Leu	Arg	Gln	Asp	Ile	Asp	Asp	Met	Thr	Gln	
	295					300					305		
att	ggg	gat	cag	aga	gtc	tct	ctg	ata	gat	gat	gaa	ccc	1027
Ile	Gly	Asp	Gln	Arg	Val	Ser	Leu	Ile	Asp	Asp	Glu	Pro	
			310					315					
agt	tat	gga	aaa	gga	tct	gac	atg	atg	tac	aat	gaa	ttt	1066
Ser	Tyr	Gly	Lys	Gly	Ser	Asp	Met	Met	Tyr	Asn	Glu	Phe	
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gat	tat	gac	tta	tgt	aat	gaa	gtt	gtt	gat	gtg	acc	tgc	1105
Asp	Tyr	Asp	Leu	Cys	Asn	Glu	Val	Val	Asp	Val	Thr	Cys	
		335					340					345	
tca	cca	aag	cca	gat	gca	ttt	aat	cca	tgt	gaa	gat	atc	1144
Ser	Pro	Lys	Pro	Asp	Ala	Phe	Asn	Pro	Cys	Glu	Asp	Ile	
				350					355				
atg	ggg	tac	aac	atc	ctc	agg	gtc	ttg	ata	tgg	ttt	att	1183
Met	Gly	Tyr	Asn	Ile	Leu	Arg	Val	Leu	Ile	Trp	Phe	Ile	
	360					365					370		
agc	atc	ctg	gcc	att	act	ggg	aac	acc	aca	gtg	ctg	gtg	1222
Ser	Ile	Leu	Ala	Ile	Thr	Gly	Asn	Thr	Thr	Val	Leu	Val	
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gtc	ctg	acc	aca	agc	caa	tac	aaa	cta	act	gtg	ccc	cgg	1261
Val	Leu	Thr	Thr	Ser	Gln	Tyr	Lys	Leu	Thr	Val	Pro	Arg	
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ttt ctt atg tgt aac ctc gcc ttc gct gat ctc tgc ata 1300  
 Phe Leu Met Cys Asn Leu Ala Phe Ala Asp Leu Cys Ile  
 400 405 410

ggc atc tac ttg cta ctt ata gca tca gtt gac atc cat 1339  
 Gly Ile Tyr Leu Leu Ile Ala Ser Val Asp Ile His  
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acc aag agc cag tac cac aac tat gcc att gac tgg caa 1378  
 Thr Lys Ser Gln Tyr His Asn Tyr Ala Ile Asp Trp Gln  
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aca gga gca ggc tgt gat gct gct ggc ttt ttc act gtc 1417  
 Thr Gly Ala Gly Cys Asp Ala Ala Gly Phe Phe Thr Val  
 440 445

ttt gcc agt gaa ctg tca gtc tac aca ttg aca gcc atc 1456  
 Phe Ala Ser Glu Leu Ser Val Tyr Thr Leu Thr Ala Ile  
 450 455 460

acc cta gaa aga tgg cat acc atc aca cat gct atg caa 1495  
 Thr Leu Glu Arg Trp His Thr Ile Thr His Ala Met Gln  
 465 470 475

ctg gaa tgc aag gtg cag ctc cgg cat gct gcc agc gtc 1534  
 Leu Glu Cys Lys Val Gln Leu Arg His Ala Ala Ser Val  
 480 485

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 Met Val Leu Gly Trp Thr Phe Ala Phe Ala Ala Ala Leu  
 490 495 500

ttc ccc atc ttt ggc atc agt agc tac atg aaa gtg agc 1612  
 Phe Pro Ile Phe Gly Ile Ser Ser Tyr Met Lys Val Ser  
 505 510

atc tgc ctg ccc atg gat atc gac agc cct ttg tca cag 1651  
 Ile Cys Leu Pro Met Asp Ile Asp Ser Pro Leu Ser Gln  
 515 520 525

ctg tat gtt atg gcc ctc ctt gtc ctc aat gtc ctg gcc 1690  
 Leu Tyr Val Met Ala Leu Leu Val Leu Asn Val Leu Ala  
 530 535 540

ttt gtg gtc atc tgt ggc tgc tat acc cac atc tac ctc 1729  
 Phe Val Val Ile Cys Gly Cys Tyr Thr His Ile Tyr Leu  
 545 550

aca gtg agg aat cct acc att gtg tcc tca tca agc gac 1768  
 Thr Val Arg Asn Pro Thr Ile Val Ser Ser Ser Ser Asp  
 555 560 565

acc aag att gcc aag cgc atg gcc aca ctc atc ttc aca 1807  
 Thr Lys Ile Ala Lys Arg Met Ala Thr Leu Ile Phe Thr  
 570 575

gac ttt ctc tgc atg gcc ccc att tca ttc ttt gcc att 1846  
 Asp Phe Leu Cys Met Ala Pro Ile Ser Phe Phe Ala Ile  
 580 585 590

tct gcc tcc ctc aag gtg ccg ctc atc act gtg tcc aag 1885

Ser Ala Ser Leu Lys Val Pro Leu Ile Thr Val Ser Lys  
 595 600 605

gcc aag att ctc cta gtt ctg ttc tac ccc atc aat tct 1924  
 Ala Lys Ile Leu Leu Val Leu Phe Tyr Pro Ile Asn Ser  
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tgt gcc aat cct ttc ctc tac gcc att ttc acc aag aac 1963  
 Cys Ala Asn Pro Phe Leu Tyr Ala Ile Phe Thr Lys Asn  
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 Cys Tyr Glu Met Gln Ala Gln Ile Tyr Arg Thr Glu Thr  
 645 650 655

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 Ser Ser Ala Thr His Asn Phe His Ala Arg Lys Ser His  
 660 665 670

tgc tcc tca gct ccc aga gtc acc aat agt tac gtg ctt 2119  
 Cys Ser Ser Ala Pro Arg Val Thr Asn Ser Tyr Val Leu  
 675 680

gtc cct ctt aat cat tca tcc cag aac taaa aatcaatgtg 2160  
 Val Pro Leu Asn His Ser Ser Gln Asn  
 685 690 692

aaaatggatc ctcaccttga aagacaatta tgactccttc tgaagagcag 2210

gccatggact aaatggcaat cctactgcac atctcatcta atttaatctc 2260

tctgggtctc tgcattggcag actgatcagg gaccattaat cacccttttg 2310

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<213> Artificial Sequence

<220>

<223> deduced sequence

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Ser Gly Cys His His Trp Leu Cys His Cys Ser Asn Arg Val Phe  
 20 25 30

Leu Cys Gln Asp Ser Lys Val Thr Glu Ile Pro Thr Asp Leu Pro  
 35 40 45

Arg Asn Ala Ile Glu Leu Arg Phe Val Leu Thr Lys Leu Arg Val  
 50 55 60

Ile	Pro	Lys	Gly	Ser	Phe	Ala	Gly	Phe	Gly	Asp	Leu	Glu	Lys	Ile	
				65					70					75	
Glu	Ile	Ser	Gln	Asn	Asp	Val	Leu	Glu	Val	Ile	Glu	Ala	Asp	Val	
				80					85					90	
Phe	Ser	Asn	Leu	Pro	Lys	Leu	His	Glu	Ile	Arg	Ile	Glu	Lys	Ala	
				95					100					105	
Asn	Asn	Leu	Leu	Tyr	Ile	Asn	Pro	Glu	Ala	Phe	Gln	Asn	Leu	Pro	
				110					115					120	
Ser	Leu	Arg	Tyr	Leu	Leu	Ile	Ser	Asn	Thr	Gly	Ile	Lys	His	Leu	
				125					130					135	
Pro	Ala	Val	His	Lys	Ile	Gln	Ser	Leu	Gln	Lys	Val	Leu	Leu	Asp	
				140					145					150	
Ile	Gln	Asp	Asn	Ile	Asn	Ile	His	Ile	Val	Ala	Arg	Asn	Ser	Phe	
				155					160					165	
Met	Gly	Leu	Ser	Phe	Glu	Ser	Val	Ile	Leu	Trp	Leu	Ser	Lys	Asn	
				170					175					180	
Gly	Ile	Glu	Glu	Ile	His	Asn	Cys	Ala	Phe	Asn	Gly	Thr	Gln	Leu	
				185					190					195	
Asp	Glu	Leu	Asn	Leu	Ser	Asp	Asn	Asn	Asn	Leu	Glu	Glu	Leu	Pro	
				200					205					210	
Asn	Asp	Val	Phe	Gln	Gly	Ala	Ser	Gly	Pro	Val	Ile	Leu	Asp	Ile	
				215					220					225	
Ser	Arg	Thr	Lys	Val	His	Ser	Leu	Pro	Asn	His	Gly	Leu	Glu	Asn	
				230					235					240	
Leu	Lys	Lys	Leu	Arg	Ala	Arg	Ser	Thr	Tyr	Arg	Leu	Lys	Lys	Leu	
				245					250					255	
Pro	Asn	Leu	Asp	Lys	Phe	Val	Thr	Leu	Met	Glu	Ala	Ser	Leu	Thr	
				260					265					270	
Tyr	Pro	Ser	His	Cys	Cys	Ala	Phe	Ala	Asn	Leu	Lys	Arg	Gln	Ile	
				275					280					285	
Ser	Glu	Leu	His	Pro	Ile	Cys	Asn	Lys	Ser	Ile	Leu	Arg	Gln	Asp	
				290					295					300	
Ile	Asp	Asp	Met	Thr	Gln	Ile	Gly	Asp	Gln	Arg	Val	Ser	Leu	Ile	
				305					310					315	
Asp	Asp	Glu	Pro	Ser	Tyr	Gly	Lys	Gly	Ser	Asp	Met	Met	Tyr	Asn	
				320					325					330	
Glu	Phe	Asp	Tyr	Asp	Leu	Cys	Asn	Glu	Val	Val	Asp	Val	Thr	Cys	
				335					340					345	
Ser	Pro	Lys	Pro	Asp	Ala	Phe	Asn	Pro	Cys	Glu	Asp	Ile	Met	Gly	
				350					355					360	



Tyr Asn Ile Leu Arg Val Leu Ile Trp Phe Ile Ser Ile Leu Ala	365	370	375
Ile Thr Gly Asn Thr Thr Val Leu Val Val Leu Thr Thr Ser Gln	380	385	390
Tyr Lys Leu Thr Val Pro Arg Phe Leu Met Cys Asn Leu Ala Phe	395	400	405
Ala Asp Leu Cys Ile Gly Ile Tyr Leu Leu Leu Ile Ala Ser Val	410	415	420
Asp Ile His Thr Lys Ser Gln Tyr His Asn Tyr Ala Ile Asp Trp	425	430	435
Gln Thr Gly Ala Gly Cys Asp Ala Ala Gly Phe Phe Thr Val Phe	440	445	450
Ala Ser Glu Leu Ser Val Tyr Thr Leu Thr Ala Ile Thr Leu Glu	455	460	465
Arg Trp His Thr Ile Thr His Ala Met Gln Leu Glu Cys Lys Val	470	475	480
Gln Leu Arg His Ala Ala Ser Val Met Val Leu Gly Trp Thr Phe	485	490	495
Ala Phe Ala Ala Ala Leu Phe Pro Ile Phe Gly Ile Ser Ser Tyr	500	505	510
Met Lys Val Ser Ile Cys Leu Pro Met Asp Ile Asp Ser Pro Leu	515	520	525
Ser Gln Leu Tyr Val Met Ala Leu Leu Val Leu Asn Val Leu Ala	530	535	540
Phe Val Val Ile Cys Gly Cys Tyr Thr His Ile Tyr Leu Thr Val	545	550	555
Arg Asn Pro Thr Ile Val Ser Ser Ser Ser Asp Thr Lys Ile Ala	560	565	570
Lys Arg Met Ala Thr Leu Ile Phe Thr Asp Phe Leu Cys Met Ala	575	580	585
Pro Ile Ser Phe Phe Ala Ile Ser Ala Ser Leu Lys Val Pro Leu	590	595	600
Ile Thr Val Ser Lys Ala Lys Ile Leu Leu Val Leu Phe Tyr Pro	605	610	615
Ile Asn Ser Cys Ala Asn Pro Phe Leu Tyr Ala Ile Phe Thr Lys	620	625	630
Asn Phe Arg Arg Asp Phe Phe Ile Leu Leu Ser Lys Phe Gly Cys	635	640	645
Tyr Glu Met Gln Ala Gln Ile Tyr Arg Thr Glu Thr Ser Ser Ala	650	655	660
Thr His Asn Phe His Ala Arg Lys Ser His Cys Ser Ser Ala Pro			

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Arg Val Thr Asn Ser Tyr Val Leu Val Pro Leu Asn His Ser Ser					
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Gln Asn					
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Cys His His Trp Leu Cys His Cys Ser Asn Arg Val Phe Leu Cys					
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Gln Asp Ser Lys Val Thr Glu Ile Pro Thr Asp Leu Pro Arg Asn					
	20		25		30
Ala Ile Glu Leu Arg Phe Val Leu Thr Lys Leu Arg Val Ile Pro					
	35		40		45
Lys Gly Ser Phe Ala Gly Phe Gly Asp Leu Glu Lys Ile Glu Ile					
	50		55		60
Ser Gln Asn Asp Val Leu Glu Val Ile Glu Ala Asp Val Phe Ser					
	65		70		75
Asn Leu Pro Lys Leu His Glu Ile Arg Ile Glu Lys Ala Asn Asn					
	80		85		90
Leu Leu Tyr Ile Asn Pro Glu Ala Phe Gln Asn Leu Pro Ser Leu					
	95		100		105
Arg Tyr Leu Leu Ile Ser Asn Thr Gly Ile Lys His Leu Pro Ala					
	110		115		120
Val His Lys Ile Gln Ser Leu Gln Lys Val Leu Leu Asp Ile Gln					
	125		130		135
Asp Asn Ile Asn Ile His Ile Val Ala Arg Asn Ser Phe Met Gly					
	140		145		150
Leu Ser Phe Glu Ser Val Ile Leu Trp Leu Ser Lys Asn Gly Ile					
	155		160		165
Glu Glu Ile His Asn Cys Ala Phe Asn Gly Thr Gln Leu Asp Glu					
	170		175		180
Leu Asn Leu Ser Asp Asn Asn Asn Leu Glu Glu Leu Pro Asn Asp					
	185		190		195
Val Phe Gln Gly Ala Ser Gly Pro Val Ile Leu Asp Ile Ser Arg					
	200		205		210
Thr Lys Val His Ser Leu Pro Asn His Gly Leu Glu Asn Leu Lys					
	215		220		225

Lys	Leu	Arg	Ala	Arg	Ser	Thr	Tyr	Arg	Leu	Lys	Lys	Leu	Pro	Asn	
				230						235				240	
Leu	Asp	Lys	Phe	Val	Thr	Leu	Met	Glu	Ala	Ser	Leu	Thr	Tyr	Pro	
				245						250				255	
Ser	His	Cys	Cys	Ala	Phe	Ala	Asn	Leu	Lys	Arg	Gln	Ile	Ser	Glu	
				260						265				270	
Leu	His	Pro	Ile	Cys	Asn	Lys	Ser	Ile	Leu	Arg	Gln	Asp	Ile	Asp	
				275						280				285	
Asp	Met	Thr	Gln	Ile	Gly	Asp	Gln	Arg	Val	Ser	Leu	Ile	Asp	Asp	
				290						295				300	
Glu	Pro	Ser	Tyr	Gly	Lys	Gly	Ser	Asp	Met	Met	Tyr	Asn	Glu	Phe	
				305						310				315	
Asp	Tyr	Asp	Leu	Cys	Asn	Glu	Val	Val	Asp	Val	Thr	Cys	Ser	Pro	
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Lys	Pro	Asp	Ala	Phe	Asn	Pro	Cys	Glu	Asp	Ile	Met	Gly	Tyr	Asn	
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Ile	Leu	Arg	Val	Leu	Ile	Trp	Phe	Ile	Ser	Ile	Leu	Ala	Ile	Thr	
				350						355				360	
Gly	Asn	Thr	Thr	Val	Leu	Val	Val	Leu	Thr	Thr	Ser	Gln	Tyr	Lys	
				365						370				375	
Leu	Thr	Val	Pro	Arg	Phe	Leu	Met	Cys	Asn	Leu	Ala	Phe	Ala	Asp	
				380						385				390	
Leu	Cys	Ile	Gly	Ile	Tyr	Leu	Leu	Leu	Ile	Ala	Ser	Val	Asp	Ile	
				395						400				405	
His	Thr	Lys	Ser	Gln	Tyr	His	Asn	Tyr	Ala	Ile	Asp	Trp	Gln	Thr	
				410						415				420	
Gly	Ala	Gly	Cys	Asp	Ala	Ala	Gly	Phe	Phe	Thr	Val	Phe	Ala	Ser	
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Glu	Leu	Ser	Val	Tyr	Thr	Leu	Thr	Ala	Ile	Thr	Leu	Glu	Arg	Trp	
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His	Thr	Ile	Thr	His	Ala	Met	Gln	Leu	Glu	Cys	Lys	Val	Gln	Leu	
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Arg	His	Ala	Ala	Ser	Val	Met	Val	Leu	Gly	Trp	Thr	Phe	Ala	Phe	
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Ala	Ala	Ala	Leu	Phe	Pro	Ile	Phe	Gly	Ile	Ser	Ser	Tyr	Met	Lys	
				485						490				495	
Val	Ser	Ile	Cys	Leu	Pro	Met	Asp	Ile	Asp	Ser	Pro	Leu	Ser	Gln	
				500						505				510	
Leu	Tyr	Val	Met	Ala	Leu	Leu	Val	Leu	Asn	Val	Leu	Ala	Phe	Val	
				515						520				525	

Val	Ile	Cys	Gly	Cys	Tyr	Thr	His	Ile	Tyr	Leu	Thr	Val	Arg	Asn
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Pro	Thr	Ile	Val	Ser	Ser	Ser	Ser	Asp	Thr	Lys	Ile	Ala	Lys	Arg
				545					550					555
Met	Ala	Thr	Leu	Ile	Phe	Thr	Asp	Phe	Leu	Cys	Met	Ala	Pro	Ile
				560					565					570
Ser	Phe	Phe	Ala	Ile	Ser	Ala	Ser	Leu	Lys	Val	Pro	Leu	Ile	Thr
				575					580					585
Val	Ser	Lys	Ala	Lys	Ile	Leu	Leu	Val	Leu	Phe	Tyr	Pro	Ile	Asn
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Ser	Cys	Ala	Asn	Pro	Phe	Leu	Tyr	Ala	Ile	Phe	Thr	Lys	Asn	Phe
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Arg	Arg	Asp	Phe	Phe	Ile	Leu	Leu	Ser	Lys	Phe	Gly	Cys	Tyr	Glu
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Met	Gln	Ala	Gln	Ile	Tyr	Arg	Thr	Glu	Thr	Ser	Ser	Ala	Thr	His
				635					640					645
Asn	Phe	His	Ala	Arg	Lys	Ser	His	Cys	Ser	Ser	Ala	Pro	Arg	Val
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Thr	Asn	Ser	Tyr	Val	Leu	Val	Pro	Leu	Asn	His	Ser	Ser	Gln	Asn
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Ala	Ile	Glu	Leu	Arg	Phe	Val	Leu	Thr	Lys	Leu	Arg	Val	Ile	Pro
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Lys	Gly	Ser	Phe	Ala	Gly	Phe	Gly	Asp	Leu	Glu	Lys	Ile	Glu	Ile
				50					55					60
Ser	Gln	Asn	Asp	Val	Leu	Glu	Val	Ile	Glu	Ala	Asp	Val	Phe	Ser
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Asn	Leu	Pro	Lys	Leu	His	Glu	Ile	Arg	Ile	Glu	Lys	Ala	Asn	Asn
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Leu	Leu	Tyr	Ile	Asn	Pro	Glu	Ala	Phe	Gln	Asn	Leu	Pro	Ser	Leu
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Arg	Tyr	Leu	Leu	Ile	Ser	Asn	Thr	Gly	Ile	Lys	His	Leu	Pro	Ala

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				125										135
Asp	Asn	Ile	Asn	Ile	His	Ile	Val	Ala	Arg	Asn	Ser	Phe	Met	Gly
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Leu	Ser	Phe	Glu	Ser	Val	Ile	Leu	Trp	Leu	Ser	Lys	Asn	Gly	Ile
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Glu	Glu	Ile	His	Asn	Cys	Ala	Phe	Asn	Gly	Thr	Gln	Leu	Asp	Glu
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Leu	Asn	Leu	Ser	Asp	Asn	Asn	Asn	Leu	Glu	Glu	Leu	Pro	Asn	Asp
				185										195
Val	Phe	Gln	Gly	Ala	Ser	Gly	Pro	Val	Ile	Leu	Asp	Ile	Ser	Arg
				200										210
Thr	Lys	Val	His	Ser	Leu	Pro	Asn	His	Gly	Leu	Glu	Asn	Leu	Lys
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Lys	Leu	Arg	Ala	Arg	Ser	Thr	Tyr	Arg	Leu	Lys	Lys	Leu	Pro	Asn
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Ser	His	Cys	Cys	Ala	Phe	Ala	Asn	Leu	Lys	Arg	Gln	Ile	Ser	Glu
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Leu	His	Pro	Ile	Cys	Asn	Lys	Ser	Ile	Leu	Arg	Gln	Asp	Ile	Asp
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Asp	Met	Thr	Gln	Ile	Gly	Asp	Gln	Arg	Val	Ser	Leu	Ile	Asp	Asp
				290										300
Glu	Pro	Ser	Tyr	Gly	Lys	Gly	Ser	Asp	Met	Met	Tyr	Asn	Glu	Phe
				305										315
Asp	Tyr	Asp	Leu	Cys	Asn	Glu	Val	Val	Asp	Val	Thr	Cys	Ser	Pro
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Lys	Pro	Asp	Ala	Phe	Asn	Pro	Cys	Glu	Asp	Ile	Met	Gly	Tyr	Asn
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Ile Leu Arg

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